Bycatch Communication Network
# NEWSLETTER
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## In This Issue





It was while reading the weekend paper that I came across an article on the bycatch of an iconic "Aussie", the platypus, from a type of yabby (Australian freshwater crayfish) and redclaw trap used widely in Queensland by recreational fishers. While not a commercial fisheries issue, I thought the inclusion of the article in the BCNN was relevant on two counts: 1) the Australian lifestyle is epitomised by all things "sun, sea and surf" and as such, recreational fishing is a popular national pastime, and 2) the platypus is in a league of its own, endemic to Australia and one of only two species representing the "missing link" between egg layers and true mammals, the monotremes.

The press release from the Wildlife Preservation Society of Queensland (WPSQ) states that…" up to five dead platypuses have been recovered from a single trap…and while the platypus is not regarded as a threatened species, numbers have already declined in some places because of habitat degradation, while prolonged drought and major floods are creating further difficulties. The platypus is dependent on water bodies for its food and with the predictions suggesting that much of its present range will become drier as climate change progresses, the platypus needs all the help it can get".

As simple modifications and the use of different traps can prevent the capture of this unique species and considering they are banned in all other eastern states other than NSW where their use is restricted, there is no excuse for this issue not to be resolved in the very near future.

Emma Bradshaw - Editor (ejb@bigpond.net.au)

## Sabah TEDs - Project Update

Nicolas Pilcher, Marine Research Foundation, Malaysia

Following an extremely successful first phase trialling TEDs in Sabah (Malaysia) waters (see BCCN Issue 7 pp.14-16), during which over 400 paired trials demonstrated the effectiveness of the grids while not losing catch, the Marine Research Foundation (MRF) continues to work with the Sabah Department of Fisheries and local fishers with the goal of making Sabah TED-compliant in the coming years.

Through NOAA's National Marine Fisheries Service (NMFS), particularly their Harvesting Systems Branch in Pascagoula Mississippi, USA, the quest to keep endangered sea turtles alive has been helping the MRF in Sabah to ensure TEDs are accepted by local fishers, in partnership with the Sabah Fisheries Department. In May 2009, MRF brought five Malaysian fishers and fishery officers to the Pascagoula lab to learn about TEDs: how they work,

Cefas

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The proud Malaysian team displaying a TED of their own making © Nicholas Pilcher.

changes needed to vessels and legal processes. The trip was a resounding success, with outstanding efforts by NMFS to share knowledge and an amazing reception by the Malaysian delegation, accentuated by the (often hilarious) coming together of the "Down South" and "Far East" cultures.

The main difference here was that the backdrop for the tour was that every boat was TED-compliant, whereas when trainers came to Sabah in 2007, the backdrop was a fishery with not a single TED in sight. This way of sharing expertise – as in the Malaysian team travelling to the US rather than the US coming to visit Malaysia – has to be the best way to do things. While there are significant costs involved, there are also significant advantages to the learning setting that outweigh any logistical or financial issues: driving along the shores seeing boat after boat equipped with several TEDs just made the story stick. When the NMFS outreach team came to Sabah a few years ago with one or two TEDs, facing hundreds of boats without them, the message just didn't sink in. Seeing hundreds of boats *with* TEDs however, made it all so much more real. The Sabah team got to talk with fishers who use them every day, who are not afraid of them, and who actually would use them even if they were not required. Now there was a message to take home!

As summed up by a short clip from one of my trip's daily logs, testing TEDs with different openings so the Malaysian delegation could compare TED performance:

*"What a day! We had TEDs, shrimp, more shrimp, large fish, lots of laughs, a few crazy moments, more shrimp, and more learning in a day than I could have ever provided in a year. The guys were all hands-on, helping bring nets in and sort the catch – impressing even the local boat crew. We cooked up the shrimp in a southern spicy boil and ate it there and then. Good weather, loads of fun, photos and video to keep us learning for years, and the welcoming warmth of the NMFS Pascagoula crew. We couldn't have asked for a better start to the trip."*

This was one of the best experiences of my conservation-oriented career, and our hosts were nothing short of exemplary. Caring, responsive, attentive, friendly and more welcoming than one could ever imagine. Without the physical hands-on training, in the quiet, focused setting we had devised, I doubt any of the team could have said at the end that they really knew what TEDs were all about. The Malaysian crew shared some wonderful moments with the fishing and gear specialists, and took home loads of lessons and advice. If there was ever a definition for 'Sharing without Borders' in the conservation world, this trip was it. Many thanks NMFS Pascagoula Harvesting Systems and Engineering Division!

For more information contact Nicholas Pilcher at: npilcher@mrf-asia.org.

# Safe Leads for Safe Heads

Elizabeth Reid, Birdlife International, Australia

For those seeking to protect seabirds from drowning in their hundreds of thousands on longline hooks there is a simple and cheap solution – line weighting. But to the fishermen requested to put the solution into practice the risks can be far too high.

Line weighting has been introduced to increase the sink rate of branchlines and remove the baited hooks from the foraging depths of seabirds - many species of which are now facing extinction. Line weighting is perhaps the single most effective method of reducing seabird bycatch in pelagic longline fisheries but the conventional weighted swivels, which are crimped onto the lines, carry serious safety concerns for the crew.

Close-up of the Safe Lead
© Ben Sullivan

The dangers posed by conventional swivels result from bite-offs. It is a dramatic scene in a longline fishery, a shark is hauled to the surface, it swims away hard stretching the line to breaking point and creating a massive accelerating force on the lead swivels weighting the line. The line breaks and the weighted swivel becomes a bullet, recoiling back towards the boat at head height and at speeds up to 500km/hr.

There have been two known fatalities and many serious injuries caused by just such bite-off events occurring with the use of conventional line weighting. It is no wonder that some fishermen are reluctant to use this method and that more fisheries do not adopt appropriate line weighting to significantly reduce their seabird bycatch.

The problem has now been resolved by an innovative new product - the Safe Lead developed by Fishtek U.K. (www.fishtek.co.uk) and BirdLife International to advance both crew safety and seabird conservation. The Safe Lead consists of two halves of lead weight which sit either side of a rubber core through which the branch line passes. Two silicon rubber 'o' rings around the circumference of the halves of lead squeeze the lead halves together with a gripping force of around 5kg.

During a bite-off the branchline may stretch up to 20% before breaking, creating an acceleration force of over 100kg. This force greatly exceeds the gripping force of the Safe Lead on the branchline, resulting in the Safe Lead sliding in the opposite direction to the recoil direction of the branchline (away from, not towards, the vessel), dissipating tension. The threat of the lead recoiling, as happens with the conventional weighted swivels, is removed.

On-shore trials prove Safe Leads to be extremely reliable across a broad range of line tensions (20-120kg) and branchline lengths (1-4m distance from the hook), that commonly occur on fishing vessels. Safe Leads do not require crimping and so are much quicker to incorporate in branchlines than conventional weighted swivels, being simply threaded on. Unit cost compares favourably with conventional swivels and when the reduced time for rigging gear is considered, Safe Leads are cheaper.

*"I have been using Safe Leads for one year and consider them to be practical to fish with as well as virtually eliminating the incidence of dangerous fly backs when gear breaks under tension".*
John Malin, skipper, F/V Demi Maddison, Queensland, Australia.

BirdLife and Fishtek have worked with fishermen in Australia, Hawaii and South Africa, and these preliminary at-sea trials confirm that the Safe Leads are easy to rig, remain in place on the line during normal working conditions, and have no impact on target catch. They require minimal crew training and no vessel modification.

The importance of Safe Leads removing the anxiety from the fishermen as they haul in the gear cannot be overestimated, as Captain Bruce Kerb of the F/V Admiraal De Ruiter, African Tuna Ltd, says: *"The crew loved the Safe Leads; some of them were hurt by flying lead swivels in the past. Even after the experimental trip, I left Safe Leads on the line and continued using them on the following trips. They are excellent as they serve the birds and the crew."*

For more information about Safe Leads, including bulk ordering and distribution, contact pete@fishtek.co.uk or visit www.fishtek.co.uk

# Project AWARE'S Cleanup Day, Sept 19

Joanna McNamara, Project AWARE, Australia

Plastic bags choke marine life and should be phased out globally according to a United Nations (UN) top official at the launch of a report *Marine Litter: A Global Challenge.* Project AWARE Foundation supports the movement to cut plastic bag consumption and curb catastrophic levels of plastic entering our ocean. With a worldwide push to monitor marine debris, Project AWARE calls upon the global dive community to make sure their data counts during International Cleanup Day on September 19th.

Achim Steiner, Head of the UN Environment Programme, said that there was "zero justification" for manufacturing plastic bags anywhere. The UN report details the devastating impact of plastics in our ocean affecting every level of the marine food chain.

Project AWARE Foundation divers and water enthusiasts regularly clean underwater environments to address the issue and will take the plunge on International Cleanup Day in more than 100 countries. With unique access to the underwater world, scuba divers can help remove underwater debris, raise awareness and drive positive change. All data collected by Project AWARE volunteers will contribute to the compelling Global Marine Debris Index prepared by the Ocean Conservancy. In the 2008 Index, a reported 1.4 million plastic bags were collected worldwide in one day.

As the amount of marine rubbish continues to increase, Project AWARE calls for renewed community action. "*This is your chance to make a difference in your community and your local dive site and contribute to reducing debris by collecting important information*" (Project AWARE Foundation Associate Director, Mike Holme).

"*Better data means better decision making. Most divers recognize the importance of data collection to drive positive change for our oceans. But there is more that we can do. Sixty five percent of cleanup coordinators returned their data in 2008, so Project AWARE urges all divers to go online to be included in the Marine Debris Index going forward,*" adds Holme.

With a 16 year track record of spearheading underwater and beach cleanups, Project AWARE inspires thousand of divers to be ambassadors for the underwater world. Now Project AWARE's data collection efforts are recognized by the United Nations, but a continued drive for strong

consistent data is the key to help illuminate the underwater issues related to marine debris. Visit www.projectaware.org to find an event near you.

## 2008 Cleanup Facts and Figures

- The plastic bag ranks number two in the list of top ten marine debris items;
- 11,070 disposable nappies (diapers)were collected in the Philippines;
- 397,231 food wrappers in the USA;
- 10,338 cigarette butts in Bangladesh;
- 2,166 plastic bottles in Fiji; and
- 16,763 plastic food containers in Thailand.

For more information contact Joanna McNamara at: joanna.mcnamara@projectaware.org.au

# Blue Whale Reveals a Sobering Reminder About the Threats of Marine Debris

Andrew Baxter, Nelson/Marlborough Conservancy, Department of Conservation, New Zealand

In late May 2009, the washed-up body of a 21m female southern blue whale was discovered south of Whanganui Inlet on the exposed and remote north-western coast of the South Island, New Zealand. The next day, a recreational fisher observed a mass of whale intestines floating a few kilometres offshore. But what was thought to be "just another dead whale" (albeit a very large one) soon turned out to be much more.

There was a very large dorsal wound, with shark bites evident along its margins. The tail area was also badly damaged. More sinister, however, was the discovery of rope within the whale's gut by two people from Wellington who visited the site several days later. By this time the whale had begun to break up, revealing two separate lengths of rope over 2m extracted from the oesophagus and a further 1.8m (and an unknown quantity of matted fibrous rope) from lower in the gut. The three-strand polyamide rope is the sort typically used for hawsers or mooring ropes.

Whale and stranding site. Note the mutilated tail and the DOC ranger crouching at the whale's mouth. © NZ Department of Conservation.

Due to the advanced state of decomposition and disintegration of the carcass by the time the rope was discovered, and the logistical difficulties involved, it was decided not to undertake a post mortem. The exact cause of the blue whale's death therefore, remains uncertain.

The primary cause of the large dorsal wound is unknown, but possibilities include an eruption of body organs due to decomposition, or collision with a vessel (before or after death). The shark predation observed along the margins of the dorsal wound could have happened prior to, or after death, depending on the cause of the initial trauma.

Left: rope and oesophagus, right: close up of the ingested rope. Both images © Haydon and Suzanne Miller.

Mutilation of the tail area may have been the result of vessel collision or possibly entanglement.

Similarly, it is not certain whether the ingested rope actually caused the whale's death. However, given the quantity of rope within the gut, some of which had unravelled to form a dense matted clump, it is concluded the rope would have at least made the whale very unwell and would have likely contributed to its death. The source of the rope is also unknown, though it was probably washed or thrown overboard from a vessel at sea.

Irrespective of the uncertainties surrounding the precise cause of death and the role of the rope in the blue whale's demise, the incident illustrates the threat of marine debris in the ocean – a threat not just to seabirds, turtles and smaller marine mammals, but also to our largest marine inhabitants.

For more information contact Andrew Baxter at: abaxter@doc.govt.nz.

# Bycatch Reduction in French Guiana Shrimp Fisheries

Michel-Anthony Nalovic[1], Laurent Kelle[2], Linda Rieu[2]
[1] CRPMEM (French Guiana Regional Fishery and Ocean Farming Commission), [2] WWF-France (French Guiana Office)

In French Guiana, the tropical shrimp fishery is a major source of bycatch. Without the use of a BRD (Bycatch Reduction Device), 300 species of fish are potentially caught by this technique with shrimp representing only 10 - 30% of the total catch.

Marine turtles are included in the bycatch, but levels of interaction are not well quantified, however, their significant numbers in the coastal waters of French Guiana suggest that incidental capture may be frequent.

As such, WWF-France assisted the shrimp fishing sector to develop and improve their fishing techniques by introducing TEDs (Turtle Excluder Devices) to limit the incidental captures of large bycatch species.

This system consists of a rigid grill inserted at a 45° angle in the trawl with an opening toward the top or bottom. Its use eliminates 97% of marine turtle capture and other large marine species not targeted by the shrimp fishermen.

Thanks to funding provided by the European Union and the DIREN (Regional Environmental Authorities), WWF commissioned a study from IFREMER (French Research Institute for Exploitation of the Sea) to determine which selective gear would be most suitable for fishing conditions in French Guiana. Initial trials, conducted under experimental conditions, were carried out on-board a trawler in French Guiana.

Following these trials, shrimp industry members expressed the need to continue the experiments and to become more involved in the project. In response, WWF and the CRPMEM began working in close collaboration in order to determine the best gear for the French Guiana fleet.

With technical support from NOAA (National Oceanic and Atmospheric Administration) and IFREMER, the CRPMEM was able to carry out numerous at-sea trials in close collaboration with French Guiana fleets. Specific parameters where tested such as the shape and spacing between the bars of the TED. Crew members of the fleet gained valuable information and experience on the use and advantages of the device.

After three years of trials, a prototype combining the advantages of different systems was identified. This model, re-named the TTED (Trash & Turtle Excluder Device), offers numerous advantages; ecological (25 to 40% reduction of bycatch), social and financial. The TTED reduces sorting time and the risk of injury from sharks and rays no longer included as bycatch. The use of the TTED, also results in a better quality of shrimp (i.e. less likely to be crushed in the bottom of the trawl) and may also lead to a reduction in fuel consumption.

As a result, the CRPMEM adopted the unanimous motion to make the use of the TTED mandatory by January 2010, when the annual fishing licence is issued. Until this time, WWF and CRPMEM are continuing to work together and have recently launched a new project funded by the FEP (European Fisheries Fund), the MAP (Ministry of Agriculture and Fishery) and the French Guiana Regional Council, to equip all local trawlers with TTEDs and provide expert training to crews by NOAA in their correct use.

For more information contact Linda Rieu at: rieulinda@yahoo.fr.

# NZ Sea Lions Miss Out on Bumper Squid Season

Kirstie Knowles, Forest & Bird marine conservation advocate, New Zealand

It's been a bumper year for squid in the seas around the sub-Antarctic islands to the south-east of New Zealand, which should have been good news for threatened New Zealand sea lions that breed on the islands and feed on squid.

Instead, it's been a bumper year for squid trawlers, which fished the waters for about two months longer than usual – from February to late July and led to a 57% jump in the number of sea lions drowned in squid nets. The death toll this year is estimated at 72, compared with 46 last year, and 56 in 2007. These deaths are not a good sign for the sea lion breeding season next summer. Alarmingly, last summer, New Zealand's Department of Conservation reported 600 females did not return to their breeding sites on the sub-Antarctic islands and 31% fewer pups were born.

About 82% of sea lions killed are female, and most of these are pregnant with their next pup in addition to caring for a pup on-shore. The loss of one female sea lion often results in three deaths.

New Zealand sea lions were once found around mainland New Zealand coasts. Now a few colonies breed on the sub-Antarctic islands and a few individuals breed on beaches in southern mainland New Zealand. They have been classified as a threatened species since 1997. Last year the World Conservation Union (IUCN) elevated their status by listing them as "in decline".

Each year the New Zealand Fisheries Minister sets a limit on the number of sea lions which may be killed in the squid fishery. Once this limit is reached, the fishery is closed.

NZ sea lion © NZ Department of Conservation

Last December, Fisheries Minister Phil Heatley set a kill quota of 113 sea lions for this season – a 40% increase on the previous year's limit of 81. Squid fishers voluntarily reduced this to 95 after the Department of Conservation's announcement of the 31% reduction in pup numbers.

Forest & Bird is pushing for the sea lion kill quota to be reduced closer to zero, to help the sea lion population recover. This includes the transfer of fishing activities to waters where there is a far lower risk of interaction with sea lion populations.

Sea lions are also killed in other New Zealand fisheries, including the scampi and southern blue whiting fisheries – the latter is currently applying for a sustainable fishery tick under the Marine Stewardship Council certification scheme.

Squid fishers are encouraged to use sea lion exclusion devices (SLEDs), which have an escape hatch for sea lions that get caught in trawl nets. But some scientists question how effective they are at reducing sea lion mortality. The Ministry of Fisheries gives a discount rate so fishers using SLEDs can catch more sea lions in their nets without penalty.

Forest & Bird believes there should be no discount rate because despite years of work on these devices, there is still no evidence that sea lions survive once they escape the net.

We recommend that squid fishers move away from using indiscriminate trawl nets and switch to other methods, such as jigging, that don't harm sea lions. Forest & Bird would also like the Auckland Islands Marine Mammal Sanctuary extended from its 22km boundary to a depth of 500m depth to better protect the sea lions feeding in the area.

More Ministry of Fisheries observers are needed on fishing boats to record all sea lions being caught. It's a worrying coincidence that the only reports in 2008 of sea lions being caught in squid trawl nets were from boats with official observers on board. This year, observer coverage stopped after 16 weeks of fishing, even though fishing boats were still working eight weeks later.

For more information contact Kirstie Knowles at: k.knowles@forestandbird.org.nz.

# Traps Killing Off Platypuses

Brian Williams, Environmental Reporter, The Courier Mail, Australia

A yabby trap widely sold in Queensland, Australia, is thought to be a major killer of platypuses, turtles and native water rats. The Opera House traps – so called because of their shape – have been banned in other states because of the damage they do to native wildlife. Wildlife Preservation spokesman Des Boyland said the traps were deadly, simply because the opening through which yabbies swam was large enough to allow in much larger air-breathing creatures such as a platypus, which would be trapped and drowned.

Mr Boyland said anglers who used them faced fines of up to AUD 10,000 in other states.

Left: young male platypus and right: dead platypus in an opera house trap. Both images © The Australian Platypus Conservancy (APC).

Water rat numbers are thought to have crashed in Cooper Creek in far western Queensland and places such as Innaminka, not far over the border in South Australia, because of Queenslanders using Opera House traps. Mr Boyland said he hoped a workable alternative could be found that would save bycatch from drowning.

It might be that a reduction in the trap entrance size from 10cm to 6cm would stop platypus and turtles from being killed, but whether water rats could enter through an opening of that size is yet to be clarified. "I*t's a simple thing to do, reduce the diameter of the trap's ring and we hope the Government will move quickly on it, if it resolves the problem,*" Mr Boyland said.

"*Traps are commonly set in the summer, which is also the breeding season of the platypuses." If a breeding female is trapped in a yabby trap, any dependent young waiting in the nursery burrow for her return will slowly starve to death.*"

It is not clear exactly how many are being killed, but there is ample anecdotal evidence that they are having an impact. University of NSW platypus biologist Tom Grant said the traps were deadly and should not be used.

For more information Contact Des Boyland at: desboyland@wildlife.org.au or Dr Tom Grant at: t.grant@unsw.edu.au.

# False Killer Whale Bycatch in the Longline Exclusion Zone of the Main Hawaiian Islands

Robin W. Baird, Cascadia Research Collective, Olympia, Washington, USA

The Hawai'i-based longline fishery includes two components, a deep-set component targeting tuna (primarily bigeye tuna but also yellowfin tuna), and a shallow-set component targeting swordfish. In recent years due to bycatch of turtles, the shallow-set fishery has had 100% observer coverage, while the deep-set fishery has had approximately 20% observer coverage. Marine mammal bycatch information recorded through the observer program has indicated that one species, the false killer whale, is caught at rates that have exceeded the Potential Biological Removal (PBR) level at least since 2000, when the first bycatch information and false

killer whale estimates became available (Forney *et al.,* 2000, Forney and Kobayashi, 2007). The majority of the false killer whale bycatch is in the deep-set fishery, although some individuals have been recorded caught in the shallow-set fishery (the most recent in 2008).

Largely as a result of this high bycatch rate, efforts have been made to assess population size and population structure of false killer whales in Hawaiian waters in recent years. The first available population estimate was based on aerial surveys undertaken around the main Hawaiian Islands in the 1990s by Mobley *et al.* (2000), indicating that the population was very small (estimated at 121 individuals). A large-vessel survey of the entire Hawaiian Exclusive Economic Zone in 2002 resulted in an estimate of 236 individuals (Barlow, 2006), but for a much larger area (a re-analysis of this data set later resulted in an estimate of 484 individuals for the same area; Barlow and Rankin, 2007). Starting in 2000, photo-identification data and genetic analyses of biopsy samples collected both around the main Hawaiian Islands and elsewhere in the tropical Pacific began to provide evidence that there were in fact two populations within Hawaiian waters, an island-associated population around the main Hawaiian Islands, and an offshore population (Chivers *et al.,* 2007; Baird *et al.,* 2008a). This island-associated population is the only genetically isolated population of false killer whales to be identified.

The National Marine Fisheries Service (NMFS) officially divided false killer whales in Hawaiian waters into two stocks this year (Carretta *et al.,* 2009), and the estimate of 484 individuals arising from the 2002 survey (Barlow and Rankin, 2007) was considered the best estimate for the "pelagic" stock within Hawaiian waters. For the island-associated population, the best estimate is based on a photographic mark-recapture analysis from 2000 - 2004, with just 126 individuals estimated for the population (Baird *et al.,* 2005).

Even with the larger population estimate for the pelagic stock, bycatch in the longline fishery continues to exceed the PBR for that stock (Carretta *et al.,* 2009). Since 1992, longline fishing has been excluded around the main Hawaiian Islands to reduce conflicts with both commercial and recreational fisheries undertaken closer to shore. The longline exclusion zone boundary varies seasonally: for four months of the year, from October 1st through January 31st, more than half the boundary moves closer to the islands (Figure 1).

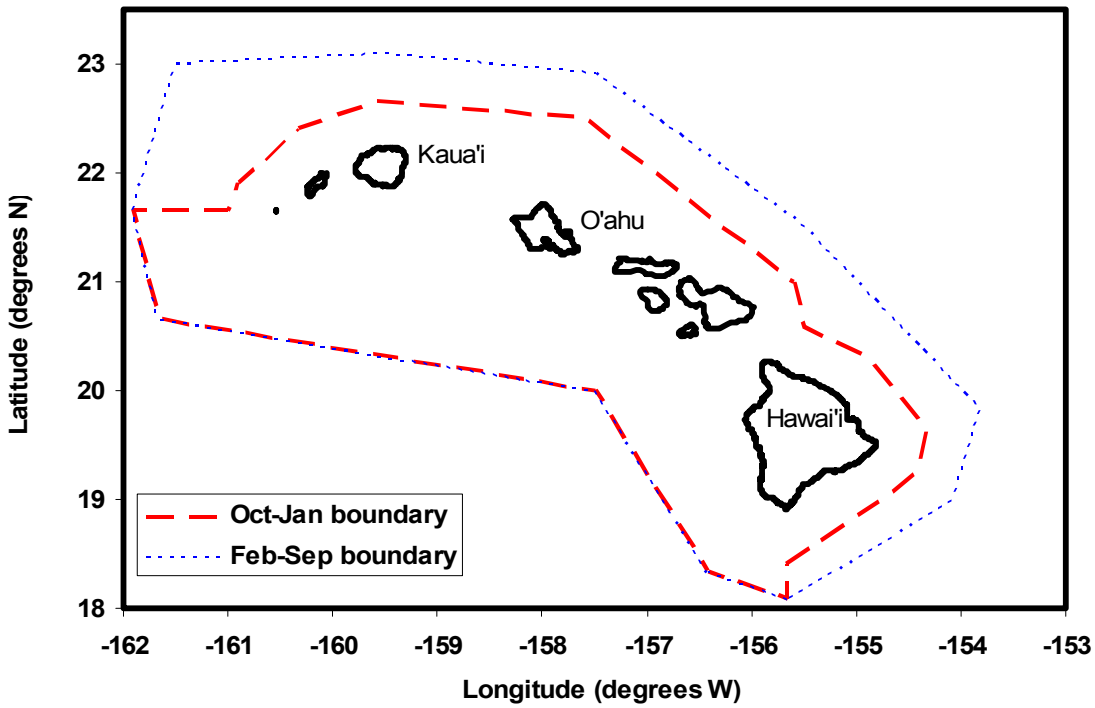


Figure 1. The longline exclusion boundary around the main Hawaiian Islands. The October 1st through January 31st boundary is shown in a red heavy dashed line, while the February 1st through September 30th boundary is shown with a blue dotted line.

The longline fishery exclusion zone has been characterized as a 25-75 nautical mile exclusion zone, although in fact, it much more complicated. As the boundaries were set initially as a series of points around the islands, with the varied contours of the islands they cannot be easily characterized by distance. A GIS analysis of the distance from the exclusion boundary to the closest point of land was undertaken at 5km intervals along the boundary. From February through September, the closest that longline fishing is allowed to the main Hawaiian Islands is 78.6km (42.4nm), while from October through January, the closest the boundary comes to the islands is 45.1km (24.3nm). From October through January, over 25% of the boundary lies between 45 and 50km from shore, but some of the boundary approaches no closer than 194 km (104nm), while in February through September the boundary distance is more diffuse, with less than 7% of the boundary between 75 and 85km from shore (Figure 2).

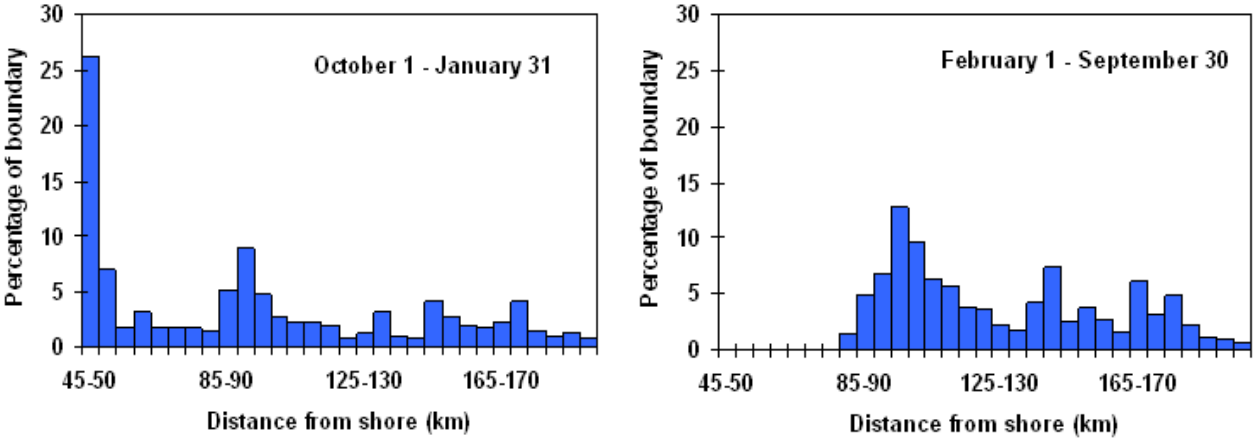


Figure 2. The distance from shore of the longline exclusion boundary for October through January (left) and February through September (right).

Why is this important? Now that the existence of a small, demographically-isolated island-associated population of false killer whales in Hawaiian waters has been officially recognized (Carretta *et al.* 2009), the question is whether the documented bycatch of false killer whales in the longline fishery comes only from the offshore population, or also potentially from the island-associated population. There is evidence the island-associated population has declined dramatically over the last 20 years, including a significant decline in sighting rates in aerial surveys undertaken by Joe Mobley and colleagues (J. Mobley, unpublished data), as well as differences in group sizes and sighting rates from a survey in 1989 compared to more recent years (Reeves *et al.* 2009). However, the causes of this decline are unclear.

In recent years, satellite tags have been deployed on false killer whales in Hawaiian waters to examine movements (Baird *et al.* 2008b). One offshore false killer whale was satellite tagged 126km west of the island of Hawai'i and did cross inshore of the longline fishery boundary (Baird *et al.* 2008b). Satellite tags have been deployed on individuals from three different groups from the insular population (11 tags total); although none of those crossed the longline exclusion boundary, all three groups did move further than 80km offshore (maximum 96km; Baird *et al.* 2008b), suggesting they likely move into areas where longline fishing occurs, if only seasonally. Gaining more information on false killer whale movements will be a slow process: in studies around the main Hawaiian Islands since 2000, with 52,000km of survey effort, false killer whales have been encountered only 27 times, an average of one sighting every 17.6 days of search effort. Given the logistics of finding false killer whales and being able to approach closely enough for satellite tagging in variable sea conditions, it will be much easier to deploy additional satellite tags on individuals from the insular population than the offshore population.

Although it will require a substantial investment of funds and time, it should be possible to characterise how much time island-associated false killer whales spend offshore in areas where longline fishing occurs. However, assessing how much time offshore animals spend in areas

False killer whale with dorsal fin disfigurement © D. L. Webster

that overlap with insular animals will be much more difficult. Observers on board longline vessels have been able to collect biopsy samples from some hooked individuals >200km from the islands, and so they do not provide any relevant information as to whether individuals from the insular population interact with the fishery.

There is evidence that individuals from the insular population interact with fisheries, including individuals that have been documented with major dorsal fin disfigurements associated with line injuries (Baird and Gorgone, 2005). Whether these injuries are from short-line gear (longlines that are <1nm in length) that occur near shore or longlines offshore is unknown. Given the small population size and the evidence of a population decline (Reeves *et al.,* 2009), identifying the sources of such injuries will be critical to conserving the small isolated island-associated population.

For more information contact Robin Baird at: rwbaird@cascadiaresearch.org.

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# BirdLife Global Seabird Programme Launches Seabird Bycatch Mitigation Fact Sheets

Elizabeth Reid, Birdlife International, Australia

In recent years, there has been significant progress made with the development of mitigation measures to reduce seabird bycatch in longline and trawl fisheries. But there has been no 'one-stop shop' to review descriptions, technical details and best practice operational guidelines for these measures.

Over the last 12 months, the BirdLife Global Seabird Programme has been working closely with world leaders in seabird bycatch mitigation to develop a series of 14 seabird bycatch mitigation fact sheets. The series provides the latest best practice advice to fishermen and policy makers about how they can most effectively reduce seabird mortality in pelagic and demersal longline and trawl fisheries. Each mitigation measure is assessed based on current scientific knowledge, including findings of the latest at-sea experimental research. Each fact sheet addresses a specific mitigation measure and makes recommendations about the most effective combination of measures.

The following table gives a list of the fact sheets that are currently available. The series of fact sheets has been designed to influence the uptake of best practice mitigation in coastal state and high seas fisheries. We have worked closely with the Agreement on the Conservation of Albatross and Petrels (ACAP) to assist in maintaining a dynamic and up-to-date resource that captures new findings derived from mitigation research and operational implementation. One of the first applications of the fact sheets will be their submission to upcoming regional fisheries management organisation meetings.

| Fact Sheet | Target Fisheries | Mitigation Measures |
|---|---|---|
| 1 | Demersal longline | Streamer lines |
| 2 | Demersal longline | Line weighting – external weights |
| 3 | Demersal longline | Integrated weight longlines |
| 4 | Demersal longline | Line weighting – Chilean system |
| 5 | Demersal and pelagic longline | Night-setting |
| 6 | Demersal longline | Underwater setting chute |
| 7 | Pelagic longline | Streamer lines |
| 8 | Pelagic longline | Line weighting |
| 9 | Pelagic longline | Side-setting |
| 10 | Pelagic longline | Blue-dyed bait (squid) |
| 11 | Pelagic longline | Bait caster and line shooter |
| 12 | Demersal and pelagic longline | Haul mitigation |
| 13 | Trawl (warp strike) | Various |
| 14 | Trawl (net entanglement) | Various |

For more information regarding the content of the fact sheets contact Ben Sullivan at: ben.sullivan@rspb.org.uk.

# The Harbour Porpoise in the Southern North Sea: Abundance, Threats, Research and Management Proposals

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At the initiative of the International Fund for Animal Welfare (IFAW), experts from the Royal Belgian Institute of Natural Sciences (RBINS) and the Royal Netherlands Institute for Sea Research (NIOZ) have compiled harbour porpoise sightings and stranding data, up to the latest 2007 figures. The added value of analysing data from Belgium and The Netherlands in parallel is obvious, showing similar trends and complementary results. The authors discuss threats, research and management proposals for the species in the southern North Sea.

## Summary

The harbour porpoise (*Phocoena phocoena*) is the most numerous cetacean species in the North Sea. For reasons not well understood, it gradually disappeared from the southern North Sea during the 1950s, to make a spectacular return towards the end of the 20th century. The analysis of Belgian and Dutch sighting data, together with the results of research on the hundreds of animals washed ashore, yielded information on ecological aspects of the population, trends and threats.

The recent increase in numbers in the southern North Sea is probably food related, and is believed to be due to an influx of porpoises from more northern waters. Strandings data seem to indicate that the influx consists for the main part of juveniles, with significantly more males than females. However, stranded pregnant females and numerous neonates indicate that some reproduction takes place in the southern North Sea. Currently, a clear seasonal pattern is apparent in the presence of porpoises. A peak in numbers in coastal waters of the southern North Sea is reached between February and April.

In late spring, a northward migration towards more offshore waters is observed, and by summer the number of porpoises in coastal waters has become low. In the Dutch Delta Area (Zeeland) a small resident population seems to have been established. Observations during 2007 and 2008 have indicated that the seasonal pattern might not be stable.

Together with the return of the porpoise to the southern North Sea, a bycatch problem became apparent. Up to half of the stranded porpoises had been killed incidentally in fishing gear at a rate that justifies concerns. The main fishing gears responsible for the porpoise bycatch are gill- and tangle nets, considered otherwise as selective and relatively environmentally friendly.

Next to a lack of data on the ecology of the porpoise, data are lacking on the true level of bycatch, and on the extent, and spatial and temporal distribution of relevant fishing methods. To obtain such data, research initiatives should be coordinated and standardised internationally. Basic research funds should be structural and be provided for a long time span.

Currently, protection initiatives are dispersed in many international nature conservation fora. Perhaps the best forum for the coordination of scientific research efforts in relation to porpoises in the North Sea would be the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS). For further developing measures, the most appropriate framework would be the European Community, given its competence in, and responsibilities for both fisheries and environmental matters. Also, measures to prevent bycatch in recreational fisheries should be coordinated internationally. One of the most promising bycatch prevention measures is the use of pingers (acoustic alarms), however, many problems with their use remain, and currently they are not mandatory for most gill and tangle net fisheries in the southern North Sea.

While currently only few Belgian and Dutch fishermen use gill and tangle nets, this is gradually changing, due to environmental concerns of beam trawling and especially the soaring gasoline prices (up to the end of 2008). Therefore it is likely that without effective protective measures, the porpoise bycatch in certain areas in the North Sea will increase. It is clear that disentangling the problems the harbour porpoise is facing, is a challenging task, given the combination of environmental, social, economical, political, legal and technical factors involved.

For a copy of the full report contact Jan Haelters at: j.haelters@mumm.ac.be or Kees Camphuysen at: Kees.Camphuysen@nioz.nl.

# Hope for Turtles in the Americas

Translated from Spanish by Karla Miliani, WWF Colombia

A group of fishermen from the remote village of Bazan in Colombia have caught a female loggerhead turtle in their nets, one of two commonly used techniques, the other being longlines with traditional “J” hooks.

Paola Rojas, a biologist working for the WWF asks them: *“What do you prefer, just a turtle soup for today’s dinner or succulent fish chowder every night?”* This straightforward question takes the fishermen by surprise and they immediately burst out laughing, not knowing what to answer. Paola then goes on to explain what WWF’s sea turtle bycatch programme along the Eastern Pacific Ocean – Central and South American coasts, is all about.

*“I know it’s not your intention to capture turtles”,* said Paola, while a local child sits on top of the loggerhead’s belly. *“I’m aware that turtles take your longline hooks accidentally while you are*

*out fishing for commercial species such as hake and grouper. Well, I have a solution; it's simply a matter of changing your hooks, from the traditional "J" hook to circle hooks".*

*"The "J" hook can be taken by small fish, whereas the circle hook can only be taken by large fish. Changing your hooks would allow smaller, younger fish of your target catch to survive, allowing them to grow to sexual maturity and produce future stocks. In the same way, the "C" hook is too large to hook within a turtle's throat. They are easy to unhook if you use a simple tool similar to a corkscrew (de-hooker)".*

The child begins to push his fingers against the soft skin of the abdomen where the turtle holds her eggs, and she releases a few drops of urine. The sun has dried her belly and her eyes release sodium chloride tears to wash away the sand, these tears are designed to expel the excess salt from their diet which is rich in jellyfish and squid. Paola knew it was just a matter of time before her audience lost interest and the animal would die. While still talking to the fishermen about the benefits of circle hooks, she convinced them to set up a net to weigh the turtle for data collection……..

The offer of a few boxes of new circle hooks for the fishermen in exchange for the commonly used "J" hooks and the opportunity to become members of a research programme cataloguing the species, size, age and stomach content of fish caught with the circle hooks appeals to three of the local fishermen.

The project began in Gorgona Island in 2005, introducing the circle hook as a replacement of the "J" hook on artisanal longlines which carry between 500 – 1,000 branchlines. One study determined that for every 1,000 hooks used in tuna fishing, an average of 1.3 turtles were caught with circle hooks as compared to 3.0 with the "J" hook. Paola adds*: "with the "J" hooks, several juvenile turtles were hooked and with the circle hook none were caught. It is absolutely clear that circle hooks are more effective when it comes to avoiding incidental capture, but it is crucial to collect further information to be 100% sure about the results".*

This trial led by the IATTC (Inter American Tropical Tuna Commission) and supported by WWF, is also taking place in Mexico, Peru, Ecuador as well as numerous locations in Central America and will help to determine the scientific viability of circle hooks. If proven successful, it would provide the necessary evidence to obtain the much needed political support to subsidise circle hooks and allow local fishermen to purchase them at an affordable price.

….after being weighed, measured and examined, the female loggerhead returns to her original position, lying on her back on the beach. Paola is encouraged, she has managed to close a deal with the fishermen that includes not only a box of circle hooks which they have agreed to trial and their participation in the research program, but the live release of the turtle.

For more information contact Karla Miliani at: medios@wwf.org.co.